Figure 1. House depressions in a settlement on Mink Island, abandoned near the beginning of the Little Ice Age, are in the foreground.

National Park Service photograph by Jeanne Schaaf

Mink Island, Katmai National Park and Preserve, Pacific Coast of the Alaska Peninsula

By Jeanne M. Schaaf

National Park Service photograph by Jeanne Schaaf

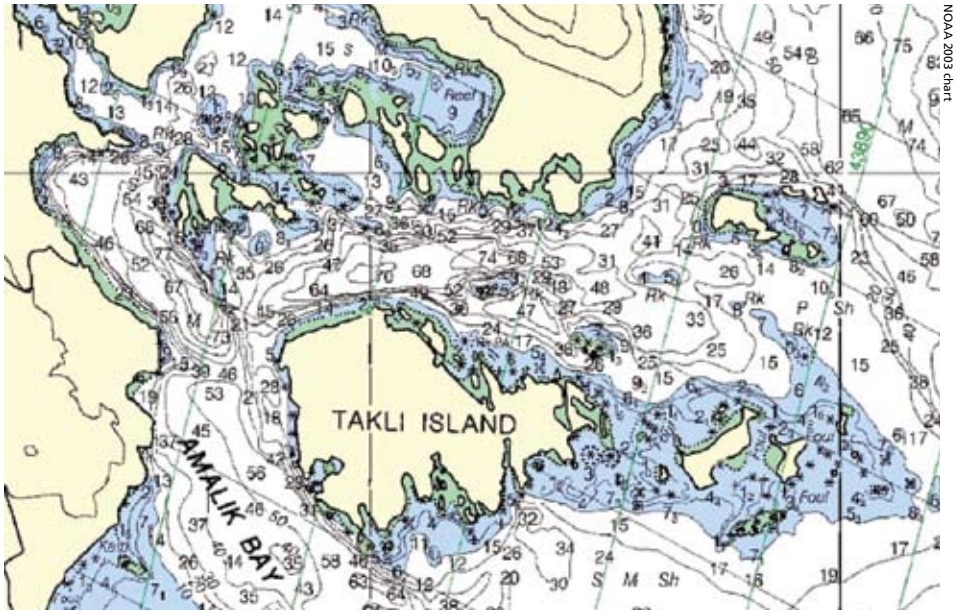
Figure 2. Nora Foster identified over 12,300 shells from the lower midden alone. She compares the intertidal resources near the site with the richest she has seen in Alaska.

The Mink Island site is located on a small, unnamed island along the Pacific coast of the Alaska Peninsula, across Shelikof Strait from the Kodiak Archipelago. The site is important regionally for its excellent preservation of several nested occupation floors and associated shell and bone deposits dating between 5500-2100 BC and AD 0-1500 (*Figure 1*). The recently excavated site provides a high-resolution and long-term snapshot of human adaptation to a volatile environment, from the time the earliest known maritime-based people settled along this coast to site abandonment in the Little Ice Age. In addition, the well-preserved vertebrate and invertebrate assemblages and site stratigraphy are unparalleled records of the area's environmental and natural history over the past 7,000 years (*Figure 2*).

The discoveries at the Mink Island site led to the designation of the Amalik Bay Archeological District National Historic Landmark, which includes the Takli Island Archeological District, long recognized as significant based on early research conducted by the University of Oregon.

The Takli Island group may have been a single large island when the first marine-focused hunter-gatherers camped there around 5500 BC (*Figure 3*). Sea levels continued to rise and stabilized at present levels after a high stand around 4,000 years ago, at which time the site was apparently abandoned for the next 2,000 years. Tsunamis generated by earthquakes and volcanic eruptions, high waves and winds from winter storms, and changes in relative sea level over the millennia have erased most of the early archeological record along the coast. The Mink Island site is a rare occurrence, and though much diminished in size, it retains a remarkable integrity in the remaining deposits (*Figure 4*). The data from Mink Island confirm a close cultural connection with Kodiak Island after 5500 BC until 1000 BC or the beginning of the Kachemak tradition on Kodiak Island (not present at Mink Island). Connections to earlier Paleo-Arctic sites on the Alaska Peninsula and in the Aleutian Islands are also indicated. The use of non-local basalt for the early large blades found on Kodiak Island suggests an Alaska Peninsula origin for these earliest people.

The first people to leave a trace on Mink Island arrived during a time when summers were warmer and drier than today with mean July temperatures perhaps 4.5° F (2.5° C) warmer (called the Hypsithermal interval). The island vegetation would have been similar to now, with low willow and birch shrubs, grass, lichens and a multitude of flowering plants, allowing an unobstructed 360° view which included the Kodiak island group 40 miles (25 km) to the east. Although alder pollen is abundant by 5000 BC in local peat deposits, it is still a rare occurrence in the vegetation on Mink Island. Within the view and soundscape was an



NOAA 2003 chart

Figure 3. Glacial ice retreated from the coast by 16,000 years ago. The Takli Island group may have been a single large island when the first marine-focused hunter-gatherers camped there around 5500 BC. Mink Island is indicated by the arrow. The blue shading shows water depth from 1-10 fathoms—and suggests a rough size of the former island.

National Park Service photograph by Mike Hilton

Figure 4. The Mink Island site is a rare occurrence in this volatile environment, and though much diminished in size, it retains a remarkable integrity in the remaining deposits.

important resource—a Steller sea lion rookery—located three miles (1.8 km) south. While no faunal material was recovered for this time period, the bones of immature sea lions appear throughout the succeeding occupation levels and likely sustained these earliest people as well. They constructed a house or shelter by excavating a basin about 16 inches (40 cm) deep and covering its floor with powdered red ochre.

Because the house was partially eroded and only partially excavated, no other architectural details have been documented except for two low perpendicular berms of unknown function on the house floor. In an ochre-stained pit below the house floor, a finely made boat-shaped lamp was found resting on two large basalt blades and mussel shell (*Figure 5*). Charcoal from the bottom of this basalt lamp yielded the oldest date for the site, predating the radiocarbon dates on the house floor by over 200 years. It and a similar lamp found on a house floor at the Zaimka Mound site on Kodiak Island are believed to be the oldest reported lamps in North America. The discrepancy between the dates from the sub-floor pit containing the lamp and the house floor may indicate separate occupations, or it may be due to the use of old driftwood, as the only material available for radiocarbon dating from the bottom of the lamp was unidentified softwood. Driftwood could have been "banked" on the island for quite a long time prior to settlement.

Although no evidence was found in the artifact assemblage, these people undoubtedly used watercraft for travel, fishing and for hunting a variety of sea mammals abundant in the area, such as porpoise, seal, sea otter and sea lion. Artifacts recovered from the house are dominated by large basalt blades, similar to those found at two earlier sites, one on the Alaska Peninsula (Ugashik Narrows, 8000 BC) and the other in the Aleutian Islands (Anangula, 9000 BC). A few microblades, a broken bifacial point, a grooved ground stone artifact, and some simple flake tools encrusted with ochre and organic residue comprise the small artifact collection from this occupation.

The site stratigraphy records evidence of a turbulent period immediately following the earliest occupation of the site and coincident with the end of the warm period or Hypsithermal interval. The next major occupation closely followed a volcanic eruption which deposited a 4-inch (10-cm) thick blanket of white ash on the site around 4600 BC (*Figure 6*). The site was reoccupied within years of the ashfall by sea lion hunters using ochre-stained, stemmed chipped points, large basalt blades, whale bone clam digging tools and expedient objects made from temporarily abundant pumice (such as grooved net floats). A contemporary occupation at the Tanginak Spring site in the Kodiak Archipelago similarly occurs just above

National Park Service photograph by Jeanne Schaaf

Figure 5. In an ochre-stained pit below the earliest house floor, a finely made boat-shaped lamp was found resting on two large basalt blades and mussel shell.

National Park Service photograph by Jeanne Schaaf

Figure 6. Immature sea lion scapula and tools from an occupation on the white ash or tephra from a volcanic eruption, 4600 BC.

the white ash, indicating that the volcanic event had widespread but not disastrous effects on local populations.

Around 4000 BC, corresponding with a short-term warm spike, people may have over-wintered on the island in a substantial house, and did so for many seasons based on the thick, laminated floor sediments. This is a rare example of a mid-Holocene and coastal winter house in Alaska. The builders utilized driftwood logs to support the structure, based on the size of the post holes, and heated it with a large pebble-filled hearth. Stone lamps, pecked from rounded cobbles and microblades are present in the assemblage, while large blades are lacking. A brief cold period (with a 4.5° F/2.5° C drop in mean summer temperature) followed this winter occupation and is possibly reflected by light use of the site until a small, temporary shelter was occupied around 3400 BC. This was a shallow oval depression, with a pole-supported hide cover that was, along with the floor, stained with red ochre (*Figure 7*). By this time, the use of ground slate tools is established, although evidence for the use of ground slate occurs in the preceding occupation. The floor, sealed by a volcanic ash, is exceptionally well-preserved, with discreet activity areas such as concentrated ochre grinding and stockpiling, chipped stone tool manufacture and bone needle production. The 36-inch (90-cm) thick deposit above this floor contains cultural material throughout, including distinct occupation surfaces, yet the dates from 22 excavation levels range from 3400 BC to 2100 BC in no particular order, indicating continuous site use during a period of rapid deposition.

Cultural activity abruptly ceased at the site by 2100 BC, a cooler period, and a 40-inch (1-m) thick sand dune formed on the site. This is consistent with a hiatus in the archeological record elsewhere in the region. By AD 0 the site was reoccupied, and the site occupants began accumulating an extensive shell and bone midden on top of the earlier deposits that eventually became 10 feet (3 m) thick over the next 1,500 years (*Figure 8*). As did the earlier site occupants, people continued harvesting a wide variety of intertidal resources, as well as adding whales to the list of sea mammals procured. Several human burials associated with this period of site occupation were removed from the site in the 1960s. In 1997 eroding burials were excavated, consisting of two extended sub-adults, with three small children placed between them on planks hewn from driftwood. An older female was buried in a flexed position in a pit placed immediately above the previous burial. Radiocarbon dates corrected for the marine carbon reservoir effect, place the interment of the family around AD 1450, contemporaneous with the last occupation of the site, a late prehistoric village

National Park Service photograph by Jeanne Schaaf

Figure 7. Red ochre-stained shelter occupied around 3400 BC.

of five houses, abandoned at the onset of the Little Ice Age.

Amalik Bay is spectacularly rich in marine resources with migratory waterfowl and terrestrial resources immediately available as well. The fauna identified from the Mink Island site show that despite severe periodic perturbations in the environment, people kept coming back throughout the known prehistory of the region.

Invertebrate fauna collected from the site number in the thousands and with 28 species identified, including large butter clams, mussel, whelks, snails, cockle, chiton, limpet, sea urchin and razor clam, among others. Vertebrate faunal elements recovered number over 250,000 and consist primarily of sea mammals (whale, harbor and Dall's porpoise, Steller sea lion, walrus, bearded seal, northern fur seal, harbor seal, ribbon seal, spotted seal, ringed seal and sea otter). Terrestrial mammals present in the collection are few and represent bear, caribou, dog or wolf, unidentified medium and small mammals and microtines (*Figure 9*). Fish identified include salmon, halibut, cod and rockfish.

Excavations were completed at the Mink Island site in 2000 and in 2006, a revetment of gabion baskets filled with local cobbles was placed to protect the remaining portion of the site (*Figure 10*). The site is visited annually to closely monitor the site's condition (*Figure 11*).

National Park Service photograph by Jeanne Schaaf

Figure 8. Around 0 AD, site occupants began accumulating an extensive shell and bone midden on top of the earlier deposits that eventually became over 10 feet thick over the next 1,500 years. Mike Hilton is shown here preparing a sediment peel from this shell midden.

National Park Service photograph by Jeanne Schaaf

Figure 9. Small-scale remains were recovered by water-screening through a fine mesh screen in the field by Barbara Bundy and by flotation of bulk samples in the lab. Recovery of micro-blades, fine bone needle fragments, micro debitage and even rare diatoms was accomplished by this painstaking effort.

National Park Service photograph by Roy Wood

Figure 10. A revetment now protects the oldest portion of the site from wave erosion.

National Park Service photograph by Jeanne Schaaf

Figure 11. Former Katmai Wilderness District Ranger, Missy Epping, stands on a shell midden at Mink Island, undergoing erosion from both active beaches.

Analyses of the extensive collections are underway, and the material can be viewed in the Katmai collections housed at the National Park Service, Anchorage Office.

Note:

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